



RIMEX

TAPER SECURE RADIAL (TSR) TYRE Mounting & Demounting Procedures



TAPER SECURE RADIAL (TSR) TYRE

A unique design using a taper concept to secure the flanges in place.

The taper system is self-aligning and the greater the pressure, the better it works.

There is absolute tyre support, a solid foundation as the flange does not move or rotate. The tyre is anchored and stabilized with absolutely no rim or accessory flex.

Table of Contents

- OVERVIEW
- SAFETY
- TSR MOUNTING PROCEDURE
- TSR DEMOUNTING PROCEDURE

RIMEX



RIMEX OVERVIEW

RIMEX is a custom manufacturer of all wheels and rims for mining, forestry and industrial equipment, specializing in Haul Trucks and Loaders. With over 40 years in the industry and over 45 years experience, RIMEX designs and manufactures longer-life wheels and custom applications to keep even the most difficult vehicles moving.

RIMEX™ is renowned in the industry for developing the Machined Extreme Service (MES™) Series and Taper Secure Radial (TSR™) Series of wheels and rims. Having designed a product that is machined for true roundness and has over 100% more steel across the rim in critical areas, RIMEX™ is the only manufacturer to have advanced wheel technology to precisely match modern radial tyre designs.

RIMEX's constant innovations are rapidly propelling wheel and rim technology into the future. The exciting new generation TSR Series is designed to provide even more advanced rim life by virtually eliminating flange movement. The TSR design offers extended tyre life through a superior ability to stabilise the bead and sidewall of the tyre. Similar to the MES Series, the machined surface of the TSR Series eliminates air leakage for more consistent tyre performance, while retaining the strength and endurance that has made RIMEX™ a superior product.

By focusing on the individual requirements of its customers, RIMEX designs have become the preferred choice for major mining companies and other industrial users in the replacement of standard rims. With time-tested performance, these RIMEX customers are now demanding our MES and TSR Series wheels on all their new trucks as well. To guarantee performance for tomorrow, RIMEX is currently working with leading tyre manufacturers in testing and perfecting future rim and wheel designs for the next RIMEX generation - to suit low pressure, wide based radial tyres for 400T trucks and beyond.

RIMEX Products

- **Machined Extreme Service (MES) Series**
The RIMEX MES Series rim/wheel is our answer to the more aggressive radial tyre now being used in open pit mining applications.
- **Taper Secure Radial (TSR) Series**
The RIMEX TSR Series is designed to stabilise and anchor the tyre beads, allowing the radial tyre to operate to its design potential.
- **Double Gutter (DGS) Series**
The revolutionary design of the DGS, allows for tyre changes to occur without removal of the wheel. Engineered with safety & time saving in mind, the DGS allows for a tyre change to be completed in a fraction of the time.
- **Integral Gutter Lock Ring (IGLR) Series**
Similar position sensitive concept to the DGS Series but designed for the inner wheel and steer positions. IGLR combined with DGS provides exceptionally quick and safe tyre changes from all positions.



RIMEX WHEEL PTY LTD

Email: info.australia@rimex.com

Web: rimex.com.au

RIMEX SAFETY BULLETIN

Due to extreme weights harsh conditions adding to the stresses of wheels on large earthmover mining trucks, it is very important that special care and attention are taken when handling and mounting RIMEX TSR wheels. This will ensure optimum levels of safety, improved wheel and rim performance and extended tyre life.

PLEASE NOTE: It is VERY IMPORTANT to keep the manipulating pads of the tyrehandler clear of the TSR's tapers. The tyrehandler can cause major damage to the tapered mating surfaces of the back section, bead seat bands and side flanges.

Before assembling any RIMEX TSR product:

- Thoroughly clean all foreign material (i.e. paint, grease, mounting compounds, dirt etc..) from the mounting tapers of the back section, bead seat band and side rings.
- Remove any steel burrs for a flush, uniform, machined mating surface.

Failure to address these areas when assembling TSR wheels can void the RIMEX warranty policy. It can also affect any safety and performance benefits which the TSR product provides through increased wheel and component life and extended tyre performance over conventional wheel designs.



DEFUSE THE BOMB

ALWAYS

- Ensure the tyre is completely deflated before any work is performed.
- Clean and inspect closely for worn, fatigued or damaged rims, wheels and components.
- Replace any damaged, worn, corroded or fatigued rims, wheels and components.

There's enough energy contained in a 40.00 R57 tyre to blow a 90kg man over 1.6 kilometres in the air!

DEFUZER™ VALVE



PROPER TRAINING PROCEDURES

It is absolutely necessary that everyone who comes into contact with the wheels, rims or components are trained to do the job.

Proper training includes:

- Understanding precautions to be observed during mounting and demounting
- Proper deflation of tyres and precautions to be observed when demounting
- Inspection of wheels/rims and components for damages
- Inflation of tyres mounted on the vehicle
- Monitoring tyre pressures and temperatures



RIMEX TRAINING RESOURCES

RIMEX On-Site Training

- Basic Safety and Operating Rules.
- Communications.
- Preparation of Equipment for Tyre Change.
- Removing Tyre from the Equipment Front and Rear.
- Replacing Tyre on the Equipment Front and Rear.
- Tyre Removal from the Rim Assembly.
- Install Tyre on Rim Assembly.
- Basic Tyre Maintenance.

Safer Wheel and Rim Service Video

- Introduction to Safety Video.
- Lifesaving Message.
- Tools and Preparation.
- Vertical Demounting of Tyre.
- Cleaning and Inspection of Rims and Components (Vertical).
- Vertical Mounting of Tyre.
- Horizontal Demounting of Tyre.
- Cleaning and Inspection of Rims, Components (Horizontal).
- Horizontal Mounting of Tyre.
- Review of Safety Procedures.
- Mounting and Demounting of 3-Piece Rim.

Safer Wheel and Rim Service Manual

- Inspection and Maintenance of Components.
- Proper Mounting and Demounting
- Procedures of RIMEX Wheels/Rims.
- Understanding the Features and Benefits of All RIMEX Designs.
- Identify Components.
- Understanding the Repercussions of High Air Pressures & Temperatures.

TSR MOUNTING PROCEDURE

On arrival, the TSR is supplied with three clamping plates and two mounting bolts per plate for each flange (See figure 1). Note: Clamping plates on 45" to 63" only.

These plates are installed by the factory and are to aid in correct flange placement during tyre fitment. After the proper tyre fitment has been achieved, all clamping plates and mounting bolts should be removed and stored for later use so that none of them are lost during normal operation. Also, current production TSR wheels and rims are manufactured with three or four bead seat band tabs on the O.D. of the rims. (See figures 7 & 8) DO NOT REMOVE THEM.

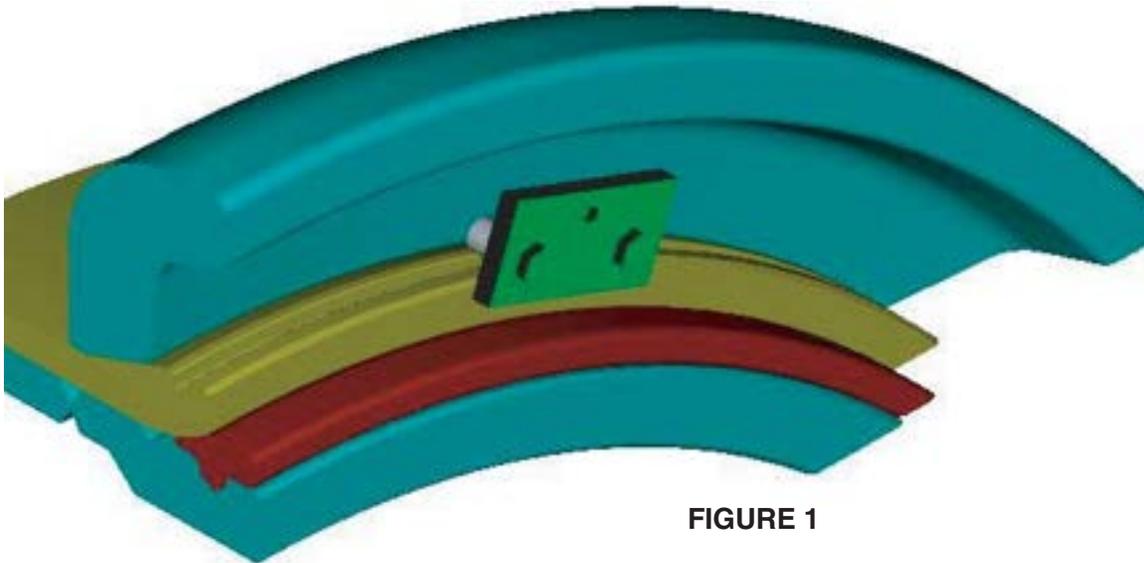


FIGURE 1

The tyre mounting and demounting procedures that follow are in addition to all safety procedures that are normally observed. Please refer to the RIMEX Safety Brochures for normal procedures. ALWAYS DEFLATE the tyre on a rim assembly before loosening any clamps or nuts. On a dual rim assembly, deflate both tyres.

Ensure that only RIMEX TSR components are used on TSR rim bases

TSR MOUNTING

Step 1

Clean ALL mating surfaces on the tyre, rim or wheel and all corresponding components. On new assemblies, remove any protective grease from machined surfaces. (See figure 2).

CLEAN ALL MATING SURFACES OF TYRE & RIM AS INDICATED ON DIAGRAM

Step 2

Apply non-petroleum bead lubricant to the following areas:

- Complete bead surface area of tyre
- Entire 5 degree area of the rim or wheel back section where the tyre bead will contact during the seating procedure (See Figure 3).
- Entire 5 degree area of the bead seat band where the tyre bead will contact during the seating procedure (See figure 4).
- O-ring

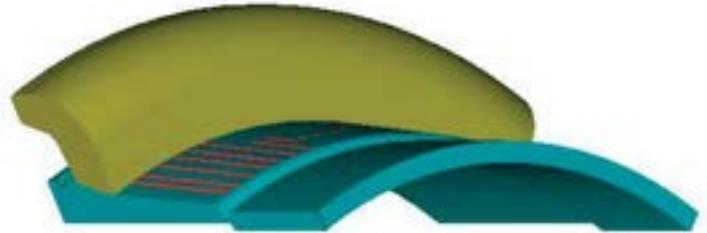


FIGURE 3

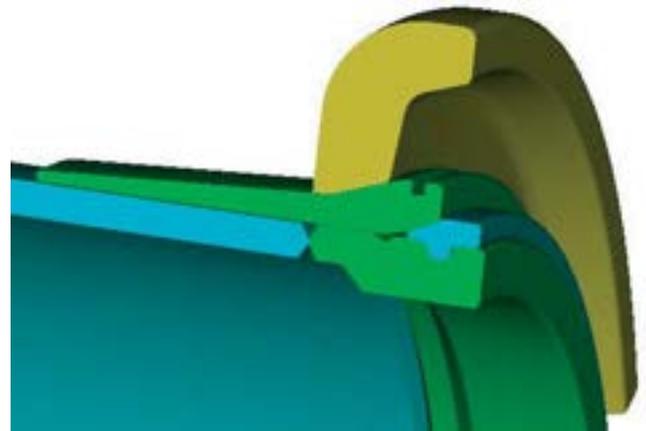


FIGURE 4

Clean any foreign build up on flange

O-ring groove & bead band I.D.

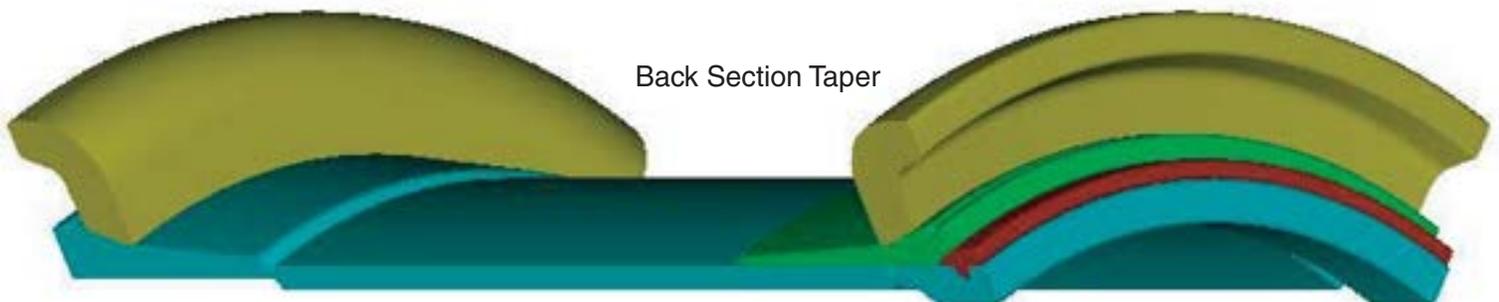


FIGURE 2

Bead Band Taper

TSR MOUNTING

Step 3:

Set the rim or wheel and back flange assembly in a horizontal position with the flange down on a rim stand (6" to 8" in height). Mount the tyre on the assembly.

Step 4

Lift the bead band and flange assembly horizontally, carefully slide the assembly over the gutter section. Slowly lower the assembly and push down until the o-ring groove is exposed.

Step 5

Install the o-ring and the TSR lock ring.

Step 6

Check the fitment of the lock ring to ensure that it is correct (See figure 5).

Step 7

Connect air hose and fill in the same manner as a standard rim/wheel assembly.

Step 8

Vertical mounting is accomplished in the same manner except the rim or wheel base should be installed on the machine it is intended for.

Step 9

In either case, horizontal or vertical, the tyre should be inflated to the manufacturer's maximum recommended pounds per square inch plus 15% to properly seat the beads of the tyre. To insure the beads have been properly seated, RIMEX drills three small depth gauge holes through the side of the flanges. A simple bead gauge can be fabricated from any 3/16 diameter rod or smaller. Insert gauge to test for proper tyre seating (See figure 6).

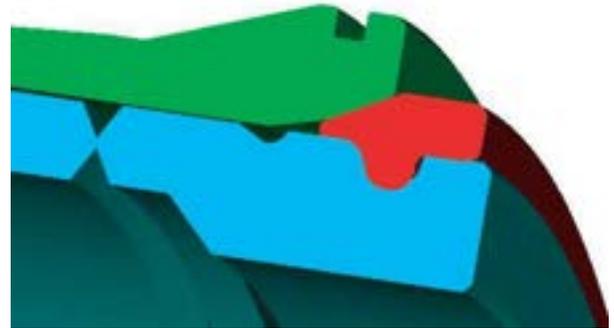


FIGURE 5

RECOMMENDATIONS:

Use the tyre manufacturers recommended non-petroleum based bead lubricant. The use of a protective antioxidant such as RIMEXCEL is also highly recommended.

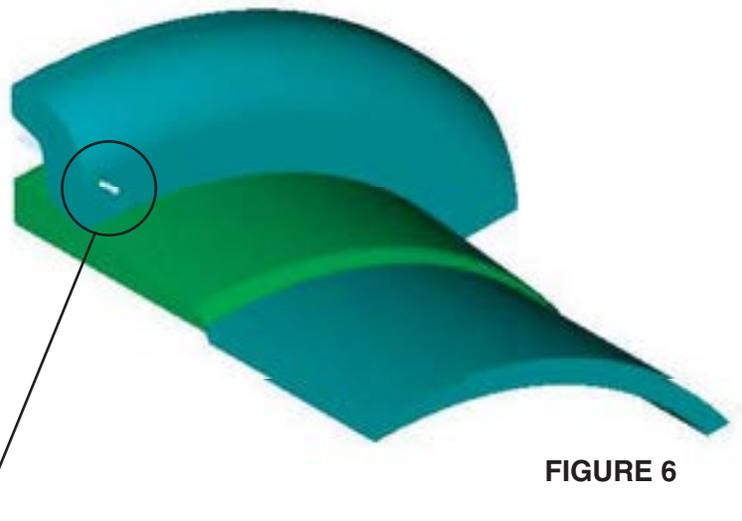


FIGURE 6



TSR DEMOUNTING

Current production model TSR rims and wheels are manufactured with three or four bead seat band stop tabs located approximately twelve inches from the gutter edge in the rim or wheel base outside diameter. These tabs stop the bead band from sliding completely down to the back section of the rim or wheel base when the tyre bead is removed from the bead seat band.

ALWAYS ensure the TSR side ring on the back section has been dislodged or freed from the back section taper **PRIOR TO** demounting the deflated tyre from the TSR rim/wheel. This ring could be under tension and spring back with some force. Keeping the deflated tyre in place until the release of the side ring, will ensure a safe demount.

Step 1

Make sure tyre is **completely DEFLATED!** To be sure of this, run a wire through the valve stem or spud to remove obstructions that would not allow total deflation.

Step 2

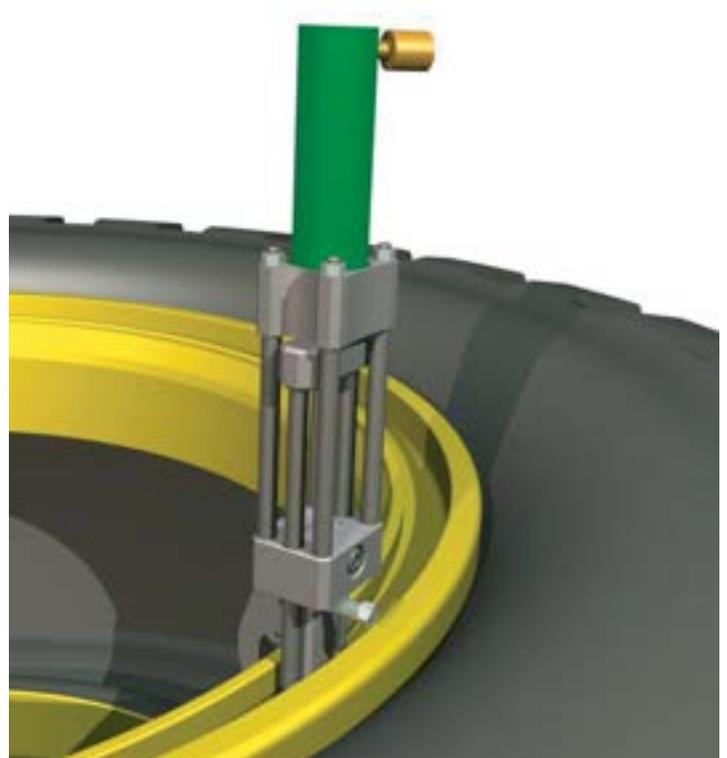
If you are using a tyre press make sure flange clamping plates are removed before placement of tyre / rim assembly in press.

Step 3

Follow all normal procedures for dismounting the tyre on the press with the exception of one. It will not be necessary to use the four bead seat band retention hooks supplied with most presses. The bead seat band stop tabs already installed on the rim or wheel will not allow the bead band to fall out of reach of the press splades.

Step 4

If the tyre and rim or wheel assembly is to remain mounted on the vehicle, it is recommended that the flange clamping plates be installed on the assembly prior to deflation. Having installed the clamping plates, make sure the tyre is now **completely deflated!**



TSR DEMOUNTING

Step 5

It is now possible to push on the side wall of the tyre just outside of the flange ring with a tyre hand to dismount the bead of the tyre off the bead seat band. In some cases, it may be necessary to grab the outside diameter of the tyre and push in while applying a twisting motion with the tyre hand to dismount the tyre bead.* Pushing on the sidewall is common practice but you may need to consult your tyre supplier to ensure there are no concerns.

Step 6

After you have demounted the bead of the tyre from the bead band, push the bead band and flange assembly far enough to enable you to remove the lockring and o-ring. After you have done this you may remove the bead seat band and flange assembly.

Step 7

To remove the back section of the tyre from the rim/wheel assembly, grab the outside diameter of the tyre with the tyre hand and pull with a twisting motion. This procedure might have to be performed more than once to demount the bead of the tyre. In some cases, it may be necessary to remove the three clamping plates and place a port-a-power ram between the frame or strut and the flange to push off the bead of the tyre.